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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,909	04/19/2004	Shailaja Kasibhatla	1735.0840002/RWE/ALS	1721

26111 7590 11/14/2008

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EXAMINER	
DUFFY, BRADLEY	
ART UNIT	PAPER NUMBER
1643	
MAIL DATE	DELIVERY MODE
11/14/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/826,909	KASIBHATLA ET AL.	
	Examiner	Art Unit	
	BRADLEY DUFFY	1643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 July 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14,16-18 and 20-47* is/are pending in the application.

4a) Of the above claim(s) *1-13, 16-18 and 32-46* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *14,20-31 and 47* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 17, 2008, has been entered.

1. The amendment filed July 28, 2008, is acknowledged and has been entered. Claim 14 has been amended.

2. Claims 1-14, 16-18, 20-47 are pending in the application.

3. Claims 1-13, 16-18 and 32-46 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on November 20, 2006.

4. Claims 14, 20-31 and 47 are under examination.

Grounds of Objection and Rejection Withdrawn

5. Applicant's amendments filed July 28, 2008, have obviated or rendered moot the grounds of objection and rejection set forth in the previous Office action mailed October 17, 2007.

Notably, claim 14 has been amended to recite “a Transferrin Receptor Related Apoptosis Inducing Protein (TRRAIP) *with the amino acid sequence of*

SEQ ID NO:1, 2, 3 or 8" from "a Transferrin Receptor Related Apoptosis Inducing Protein (TRRAIP) *encoded by* SEQ ID NO:1, 2, 3 or 8". Accordingly, this amendment has rendered moot the previous rejections under 35 USC § 112 set forth in the Office action mailed October 17, 2007.

Specification

6. The disclosure is objected to because of the following informalities:

(a) The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: In this case, while the amendment filed July 28, 2008, incorporates the limitations of original claims 20, 22, 26 and 26 into claim 14, proper antecedent basis for such methods does not appear in the specification. For example, while the specification at page 7, paragraph [0016], discloses "a method of identifying potentially therapeutic anticancer compounds comprising: (a) contacting an AIP with one or more test compounds; and (b) monitoring whether the one or more test compounds binds to the AIP; wherein compounds which bind the AIP are potentially therapeutic anticancer compounds" and that "[t]he AIP may be a transferrin receptor protein", antecedent basis for the recitation e.g., that the "assay comprises gambogic acid" could not be found in the specification.

(b) The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Appropriate correction is required.

Claim Objections

7. Claims 14, 20-31 and 47 are objected to for redundantly reciting SEQ ID NO:1, 2, 3 or 8 in claim 14. In the response filed November 20, 2006 at page 12, Applicant has submitted amino acid alignments that establish that the sequences presented in SEQ ID NO:1, 2, 3 and 8 are identical. Accordingly, it is redundant to reference the same sequence with four SEQ ID Nos and the Examiner suggests amending the claim to recite only one SEQ ID NO.

8. Claims 20, 22, 26 and 28 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. In this case, the limitations recited in these claims have been incorporated into independent claim 14, so these claims fail to further limit the methods of claim 14.

Claim Rejections - 35 USC § 101

9. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

10. Claim 31 is rejected under 35 U.S.C. § 101 because the claimed invention is not supported by either a specific and substantial asserted utility or a well-established utility.

The considerations that are made in determining whether a claimed invention is supported by either a specific and substantial asserted utility or a well-established utility are outlined by the published Utility Examination Guidelines (Federal Register; Vol. 66, No. 4, January 5, 2001). A copy of this

publication can be viewed or acquired on the Internet at the following address; http://www.gpoaccess.gov.

Briefly, a "specific and substantial" asserted utility is an asserted utility that is specific to the particular nature and substance of the claimed subject matter, and which would be immediately available for application in a "real-world" context by virtue of the existing information disclosed in the specification and/or on the basis of knowledge imparted by the prior art, such that its use would not require or constitute carrying out further research to identify or reasonably confirm its usefulness in this context. A "well-established" utility is a credible, specific, and substantial utility, which is well known, immediately apparent, and implied by the specification, and based on the disclosure of the properties of a material or subject matter, either alone or taken with the knowledge of one skilled in the art.

Claim 31 is drawn a method of identifying potentially therapeutic anticancer compounds comprising:

(a) contacting a Transferrin Receptor Related Apoptosis Inducing Protein (TRRAIP) encoded by with the amino acid sequence of SEQ ID NOS: 1, 2, 3 or 8 with one or more test compounds; and

(b) monitoring whether said one or more test compounds binds to said TRRAIP

wherein compounds which bind said TRRAIP are potentially therapeutic anticancer compounds; and

wherein said monitoring of (b) comprises determining whether said one or more test compounds bind to said TRRAIP in a competitive or noncompetitive homogeneous assay and wherein said assay is a competitive assay comprising gambogic acid having a detectable label or a gambogic acid-related compound having a detectable label wherein in (b) said label is detected, or

wherein said monitoring of (b) comprises determining whether said one or more test compounds bind to said TRRAIP in a competitive heterogeneous assay and wherein said competitive heterogeneous assay comprises gambogic

acid having a detectable label or a gambogic acid-related compound having a detectable label wherein in (b) said label is detected

wherein said potentially therapeutic anticancer compound is 1-(3-methyl-2-butenyl)-3,3-dimethyl-1,3,3a,4,5,12a-hexahydro-7,13-dioxo-1,5-methano-furo[3,4-d]xanthene, which is the elected species of invention.

In this case, the specification provides no asserted utility for this method other than that recited in the method objective which is to identify potentially therapeutic anticancer compounds. However, claim 31 states that 1-(3-methyl-2-butenyl)-3,3-dimethyl-1,3,3a,4,5,12a-hexahydro-7,13-dioxo-1,5-methano-furo[3,4-d]xanthene is a potentially therapeutic anticancer compound. Therefore, since the claim already identifies 1-(3-methyl-2-butenyl)-3,3-dimethyl-1,3,3a,4,5,12a-hexahydro-7,13-dioxo-1,5-methano-furo[3,4-d]xanthene as a potentially therapeutic anticancer compound, there is no utility that would be immediately available for application in a "real-world" context because the claim already identifies the recited compound as a potentially therapeutic anticancer compound.

Therefore, as the instant specification would not permit the skilled artisan to practice the method of claim 31, so as to immediately benefit the public, it would not satisfy the utility requirement set forth under 35 U.S.C. § 101. Because the specification does not disclose a currently available, "real world" use for the claimed methods, the requirements set forth under 35 U.S.C. § 101 have not been met.

Claim Rejections - 35 USC § 112

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 14, 20-31 and 47 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. Claims 14, 20-31 and 47 are indefinite because claim 14 recites that "said assay is a competitive ***assay comprising*** gambogic acid having a detectable label or a gambogic acid-related compound having a detectable label" or that "said assay is a competitive heterogeneous ***assay comprising*** gambogic acid having a detectable label or a gambogic acid-related compound having a detectable label". Since the claims are drawn to processes i.e., assays that would comprise active process steps, but *not comprise a product per se*, it is unclear how the recited process might be characterized as comprising one or the other of these compounds. Once again, processes *comprise* active steps that use reagents as set forth in the step, but a process *does not* comprise a reagent *per se.* How can the structure of gambogic acid having a detectable label or a gambogic acid-related compound having a detectable label be comprised in a process step? In this case, the scope of the claimed process cannot be construed without knowing the answer to this question, because it cannot be determined how the recited compounds might be comprised in a process.

Furthermore, it is noted that claim 14 is also indefinite because it recites that that the assay is a "competitive or noncompetitive homogenous assay" … "wherein said assay is a competitive assay". This recitation renders the claims indefinite because it is unclear how a non-competitive homogenous assay is a competitive assay. Is the assay non-competitive or competitive? .

Finally, while the objective of the claimed method is to *identify potentially therapeutic anticancer compounds*, the active process steps set forth in the method merely recite:

(a) contacting a Transferrin Receptor Related Apoptosis Inducing Protein (TRRAIP) encoded by with the amino acid sequence of SEQ ID NOS: 1, 2, 3 or 8 with one or more test compounds; and

(b) monitoring whether said one or more test compounds binds to said TRRAIP, by a competitive assay *comprising* gambogic acid having a detectable label or a gambogic acid-related compound having a detectable label.

How does practicing these process steps *identify potentially therapeutic anticancer compounds?* While claim 14 recites the wherein clause that "compounds which bind said TRRAIP *are* potentially therapeutic anticancer compounds", it is unclear if it is the ability of the compound to bind said TRRAIP that identifies a compound as a potentially therapeutic anticancer compound, or if all compounds that are tested are potentially therapeutic anticancer compounds, or if *potentially therapeutic anticancer compounds are identified in some other way.* In this case, the active process step set forth in part (b) merely monitors whether said one or more test compounds binds to said TRRAIP, without identifying any compounds as *potentially therapeutic anticancer compounds per se.* Is a compound which binds said TRRAIP *identified as a* potentially therapeutic anticancer compound or not? Since, there is no process step that clearly relates back to the purpose or objective of the claimed invention, the skilled artisan could not determine whether each and every process step considered essential to the practice of the claimed invention has been included in the body of the claim. Notably, since the claims lack any active process step that necessarily *identifies potentially therapeutic anticancer compounds* the claimed methods appear to be incomplete for omitting essential steps necessary to achieve the claimed objective. Thus, for this reason as well, the claims fail to delineate the subject matter that Applicant regards as the invention with the requisite degree of clarity and particularity to permit the skilled artisan to know or determine infringing and non-infringing subject matter and thereby satisfy the requirement set forth under 35 U.S.C. § 112, second paragraph.

b. Claim 47 is also indefinite because it is drawn to a method of *identifying potentially therapeutic anticancer* compounds, by the method of claim 14, further comprising contacting a cell with *a TRRAIP binding test compound identified* in step (b) of claim 14 and monitoring apoptotic activity. In this case,

the claim is indefinite because step (b) of claim 14, merely *monitors* whether said one or more test compounds binds to said TRRAIP, and, as explained above, the steps set forth in part (b) do not relate the step of monitoring *binding* to the identification of *a TRRAIP binding test compound per se.* Accordingly, it is unclear which *TRRAIP binding test compounds* are being referred to in claim 47 because step (b) of claim 14 does not recite an active process step of identifying *a TRRAIP binding test compound.*

Furthermore, it is noted that the objective of the claimed method is to *identify potentially therapeutic anticancer compounds*; yet the step further recited in claim 47 appears to be unrelated to this objective because it recites monitoring apoptotic activity in a cell contacted with a TRRAIP binding test compound.

Accordingly it is further unclear how the process step recited in claim 47 relates to the claimed method which has an objective of *identifying potentially therapeutic anticancer compounds.*

Accordingly, this claim further fails to delineate the subject matter that Applicant regards as the invention with the requisite degree of clarity and particularity to permit the skilled artisan to know or determine infringing and non-infringing subject matter and thereby satisfy the requirement set forth under 35 U.S.C. § 112, second paragraph.

13. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

14. Claim 31 are also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a specific and substantial asserted utility or a well-established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

Factors to be considered in determining whether undue experimentation is required are summarized in *Ex parte Forman*, 230 USPQ 546 (BPAI 1986). These factors include the nature of the invention, the state of the prior art, the relative skill of those in the art, the amount of direction or guidance disclosed in the specification, the presence or absence of working examples, the predictability or unpredictability of the art, the breadth of the claims, and the quantity of experimentation which would be required in order to practice the invention as claimed.

As explained, in the above rejection under 35 U.S.C. § 101, the claimed invention lacks utility because it is a process for identifying compounds that are already identified. Any need to elaborate any other use for the claimed invention would constitute a need to perform undue and/or unreasonable experimentation.

Conclusion

15. No claim is allowed.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brad Duffy whose telephone number is (571) 272-9935. The examiner can normally be reached on Monday through Friday 7:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Helms can be reached on (571) 272-0832. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-

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Respectfully,
Brad Duffy
571-272-9935

/Stephen L. Rawlings/
Primary Examiner, Art Unit 1643

/bd/
Examiner, Art Unit 1643
November 10, 2008